Wilmington Harbor
Cape Fear River, NC

General Reevaluation Report (GRR)

DRAFT PEER REVIEW PLAN

August 2007

Chemserve turning basin site, Northeast Cape Fear River

US Army Corps of Engineers

Wilmington District

1.0 Introduction

Wilmington Harbor is a Federal navigation project located along the Cape Fear and Northeast Cape Fear Rivers in southeastern North Carolina. With the signing of the Energy and Water Appropriations Bill on October 13, 1998 three separate projects (Wilmington Harbor - Northeast Cape Fear River project, Wilmington Harbor - Channel Widening project, and Cape Fear - Northeast Cape Fear Rivers project) were combined into one, the Wilmington Harbor, NC - 96 Act project. The dredged material disposal facilities improvements associated with maintenance of the existing navigation channel have been added to the deepening project. This element includes incrementally raising the dikes on Eagle Island to an elevation of 40 feet over a 20-year period. To date, the combined project has been constructed with multiple contracts at an estimated total project cost of $512,000,000 including $49 million for disposal area modifications for maintenance of the project. This is the current total project cost estimate inflated through construction completion. The initial construction of the project is cost shared 75% Federal and 25% non-Federal with an additional 10% paid by the non-Federal cost share partner over a thirty year period after initial construction is completed. The project's estimated annual benefits are $39 million compared to the estimated annual cost of $29 million resulting in a benefit to cost ratio of 1.4.

Project Description:

Improvements to date consist of deepening the ocean bar and entrance channels from the authorized depth of 40 feet to 44 feet; deepening the authorized 38-foot project to 42 feet up to and including the anchorage basin immediately upriver from the State Ports Authority dock, and the existing 400-foot wide channel has been widen to 600 feet over a total length of 6.2 miles including Lower and Upper Midnight and Lower Lilliput reaches; five turns and bends have been widened by 100 to 200 feet providing a total average channel width of 500 to 675 feet; the Fourth East Jetty Channel has been widened to 500 feet over a total length of 1.5 miles and mitigation to include construction of a 30-acre embayment.

Remaining items to be completed for the authorized project are: extending the anchorage basin northward by 300 feet; deepening the 32-foot channel between Castle Street and the Hilton Railroad Bridge, the 32-foot turning basin just above the mouth of the Northeast Cape Fear River on the west side to 38 feet, and the 25-foot channel from the Hilton Railroad Bridge to 750 feet upstream all to a depth of 38 feet; deepening the 25-foot channel from 750 feet upstream of the Hilton Railroad Bridge to the turning basin near the upstream limits of the project to 34 feet, along with widening of the channel from 200 to 250 feet; and widening the turning basin from 700 to 800 feet; acquisition of about 700 acres of existing marsh and upland areas for preservation of habitat to offset losses of wetlands and primary nursery areas, and construction of a fish passage structure around Lock & Dam #1 and study fish passage at Lock and Dam #2 and #3.

Harbor deepening to improve navigation was initiated in August 2000 with the award of two channel deepening contracts. Since then, the non-Federal cost sharing sponsor at the request of the Cape Fear Docking Pilots who are responsible for navigating all commercial traffic in the remaining portions of the project, requested that we revise project features to accommodate a relocated

turning basin upstream of the Hilton Railroad Bridge in lieu of the turning basin just above the mouth of the Northeast Cape Fear River (Almont) and any associated mitigation requirements that have not been completed to date as authorized. A General Reevaluation Report (GRR) is being prepared to address these issues. In summary, the GRR will address the following :

ISSUES TO BE ADDRESSED BY THE GRR	
1. Construction of a relocated turning basin for the harbor.	
2. Environmental mitigation issues related to the Wilmington Harbor deepening project and proposed relocated turning basin, which include:	a. Constructing fish passage at Lock and Dam #1, and study of fish passage at Locks and Dams #2 and #3. b. Additional mitigation associated with the relocated turning basin.

Following is a summary of the environmental mitigation requirements which are resulting from the Wilmington Harbor deepening project. Mitigation elements 2.A. and 2.B., which are in progress, are being addressed by the GRR.

ENVIRONMENTAL IMPACTS AND MITIGATION FOR HARBOR DEEPENING	
ENVIRONMENTAL IMPACT	MITIGATION
1. Loss of wetlands and fish primary nursery areas from harbor deepening.	A. Accomplished: a 30-acre portion of a disposal island has already been altered to create intertidal wetlands and primary nursery area.
2. Potential adverse impacts to the endangered shortnose sturgeon resulting from blasting to remove rock.	A. Planning in progress: Construct a fish passage structure at Lock and Dam #1 on the Cape Fear River.
	B. In progress: study fish passage at Locks and Dams #2 and #3, upstream.

Under above conditions 2.A. and 2.B., the National Marine Fisheries Service (NMFS) gave Wilmington District a take limit of two shortnose sturgeon, which will enable completion of the deepening project. The Environmental Assessment/Finding of No Significant Impact (EA/FONSI), “Preconstruction Modifications of Authorized Improvements, Wilmington Harbor, North Carolina”, dated August 2000 (Aug 2000 EA), addressed fish passage—the selected alternative being construction of a 3,800' foot fish passage channel around Lock & Dam #1. This project has not been constructed due to funding constraints and real estate acquisition procedures ongoing by the non-Federal sponsor. Modifying the lock and dam itself was not considered at that time, since that

would have eliminated the authorized project purpose of commercial navigation through all three locks and dams.

An added feature in the GRR is creation of a relocated turning basin in the Northeast Cape Fear River, above the Hilton Railroad Bridge near Chemserve. The relocation would alleviate the current hazards associated with ships backing through bridges, necessitated by the lack of a turning basin above the Hilton Railroad Bridge. Any of the several alternatives would affect primary nursery areas designated by the NC Division of Marine Fisheries. Existing basin(s), also adjacent to primary nursery areas, would be abandoned and allowed to silt in.

Mitigation for the relocated turning basin would include some combination of the following:

MITIGATION FOR ENVIRONMENTAL IMPACTS OF PROPOSED RELOCATED TURNING BASIN	
"In-Kind" Mitigation:	1. Restore Alligator Creek, an historic tidal creek approximately 2 miles long, on Eagle Island, connecting the Cape Fear and Brunswick Rivers.
	2. Create a tidal creek and associated floodplain on Island 12.
"Out-of-Kind" Mitigation:	3. The Project Delivery Team (PDT) is considering the relative benefits of improving fish passage at Locks and Dams #2 and #3, out-of-kind mitigation, as a portion of the mitigation package for the relocated turning basin.

A NEPA document, an EIS, will be included as a part of the GRR process, and will address the mitigation requirements.

With no commercial traffic now using, or expected to use, the locks and dams, one, two, or all three of the locks and dams could be modified for mitigation purposes. Before implementation, any recommendation for lock and dam modification must consider such factors as the following:

- Viability of the water users upstream of the locks and dams must be assured.
- Fish passage.
- Future navigation.
- Recreational fishing.
- Commercial fishing.
- Public use of parks associated with the locks and dams.
- Potential effects to wetlands.

Any recommendation to modify the locks and dams could only be fully implemented after the NEPA process is complete. Also, any recommendation to modify the locks and dams that would preclude future commercial navigation would require Congressional approval to deauthorize the project, before the recommendation could be implemented.

2.0 The Peer Review Plan

This Peer Review Plan (PRP) is a collaborative product of the project delivery team (PDT) and the National Deep Draft Navigation Planning Center of Expertise (DDNPCX). The DDNPCX shall manage the PRP, which for this study includes an Independent Technical Review (ITR). Each of the following paragraphs (a.) through (j.) correspond to the guidance provided in paragraphs 6.a. through j. of Engineering Circular 1105-2-408, "Peer Review of Decision Documents":

a. Decision Document and Team Members. The *Wilmington Harbor – 96 Act Project General Re-evaluation Report for Relocated Turning Basin and Unconstructed Mitigation* shall be the decision document. The primary purpose of the GRR is to address revised project features and mitigation issues which have arisen since the 1996 FEIS and Feb 2000 EA. The GRR will address the turning basin relocation for improved navigation, as well as completion of mitigation requirements for both the harbor deepening in progress and the proposed turning basin relocation. Following is a summary of mitigation requirements:

MITIGATION REQUIREMENTS FOR HARBOR DEEPENING AND TURNING BASIN RELOCATION	
For harbor deepening:	2. Construction of a fish passage structure at Lock and Dam #1 on the Cape Fear River.
	3. Study of fish passage at the other two upstream locks and dams on the Cape Fear River.
For turning basin relocation:	1. Allowing existing turning basins to silt in.
	2. Alligator Creek restoration.
	3. Island 12 tidal creek creation.
	4. Consideration of of fish passage Improvement at Locks and Dams #2 and #3, as potentially desirable "out-of-kind" mitigation.

The study will address structural and operational conditions, environmental issues, and the corresponding economic benefits and costs of various alternatives. The work involves plan formulation, conceptual engineering analysis, navigation considerations for both turning basin and locks and dams, environmental and cultural considerations, economic analysis, and preparation of a real estate plan. The estimated range of construction cost for the various relocated turning basin alternatives varies between $13.7 million and $21.8 million. The cost for the mitigation alternatives, giving the lowest cost to meet

minimum mitigation requirements, varies between $7 million and $9.3 million. The combined construction and mitigation “high-total” of $31.1 million is well below the $50 million threshold that would trigger an automatic EPR.

For the use of any planning or decision models, the requirements of EC 1105-2-407, *Planning, Planning Models Improvement Program: Model Certification* will be satisfied as to model certification, that is, that the model(s) utilized are reviewed and certified by the appropriate PCX.

Key PDT members are shown in the table below.

KEY PROJECT DELIVERY TEAM MEMBERS			
ROLE	NAME	ORGANIZATION	CHIEF
Non-Federal Sponsor			
Project Manager			
Program Manager			
Technical Lead			
Design, Turning Basin			
Design, Fish Passage			
Cultural Resources			
Coastal/H&H			
Geotechnical			
Navigation			
Flood Plain Modeling			
Cost, Turning Basin			
Cost, Fish Passage			
Economics			
Sediment Evaluation			
Real Estate			
Legal			
Value Engineering			
Mitigation			
Operations			
Construction			
Planning			
Resource Agencies			
Stakeholders			

For more information regarding the PRP, the project manager for the General Re-evaluation Report may be contacted as follows:

US Army Corps of Engineers – Wilmington District

Deep Draft Navigation Planning Center of Expertise
US Army Corps of Engineers – Mobile District

Walla Walla District Directorate of expertise for Civil Works Cost Engineering

b. External Peer Review. EC 1105-2-408 provides the process for deciding whether or not to employ external peer review. The following is an excerpt of EC section 9.a: *Decision documents covered by this Circular will undergo EPR if there is a vertical team consensus (involving district, major subordinate command and Headquarters members) that the covered subject matter (including data, use of models, assumptions, and other scientific and engineering information) is novel, is controversial, is precedent setting, has significant interagency interest, or has significant economic, environmental and social effects to the nation. Decision documents covered by this Circular that do not meet the standard shall undergo ITR as described in paragraph 8, above.*

Evaluation. Following is an External Peer Review Decision Checklist based upon the five considerations listed in EC 1105-2-408:

1. Novel subject matter? No. Turning basins, fish passage, and proposed mitigation types are typical subject matter.

2. Controversial subject matter? Minor. All subject matter of a controversial nature, such as approaches to mitigation and effects of dam removal on water supply intakes, has been thoughtfully considered by the entire PDT throughout the process so far. There has been consensus among PDT members on selection and evaluation of the alternatives to date.

3. Precedent setting? No. Turning basin, fish passage, and mitigation alternatives are all based on well-established precedents. Methods and models used for decision-making and technical analysis are in common use. Models used in the project are pre-certified.

4. Unusually significant interagency interest? No. Interagency interest has been strong, given both the potential adverse effects areas a new turning basin would cause to fish primary nursery, and the potential improvement of fish passage at Lock and Dam sites in the Cape Fear River above Wilmington. The level of interest has been normal and as would be expected for a project of this nature. Close coordination with all interested agencies has resulted in consensus in selection and evaluation of the alternatives.

5. Unusually significant economic, environmental, and social effects to the nation? No. The primarily regional economic, environmental, and social effects

of the favored turning basin, fish passage, and mitigation alternatives will not pose an unusual effect to the nation.

In addition to the above checklist, the following items are noted:

- **Complexity.** The proposed alternatives for turning basin, fish passage, and mitigation do not post unusually complex challenges. Although a variety of alternatives have been considered for fish passage and mitigation, a straightforward set of preferred alternatives has emerged by PDT consensus.

- **Influential science.** There is no expectation that influential scientific information or high influential scientific assessment will be disseminated by the GRR. Already-existing scientific methodology is being used to establish best alternatives for turning basin, fish passage, and mitigation.

- **Effect of conclusions.** Conclusions reached on the alternatives would not change current practices or affect present policy. The preferred alternatives are based on common practices and policy for turning basins, fish passage, and mitigation.

- **Risk.** For the preferred alternatives, there are no significant elements of risk and uncertainty related to direct endangerment of human life or property damage. Other considered alternatives would carry such minor risks as functional uncertainty of the performance of fish passage for narrow openings, and potential adverse effects on water supply/storage pools above the existing dams if dam(s) were removed.

Decision. For this study, the PDT suggests that EPR is not required at this time. The option of instituting EPR continues, and may be applied if found to be appropriate for selected disciplines at a later time.

Independent Technical Review (ITR) will be completed according to Corps regulations, employing the Deep Draft Navigation Planning Center of Expertise in South Atlantic Division. In addition to ITR, other review milestones have, and will, ensure that the analysis is technically correct, properly focused, and consistent with Corps policy, as follows:

- Feasibility Scoping Meeting
- In-Progress Review
- Value Engineering Analysis
- Alternatives Formulation Briefing
- Draft General Re-evaluation Report Policy Review
- Civil Works Review Board

These reviews have, and will, provide adequate oversight to the GRR and, together with the NEPA review process, help ensure a technically-sound and policy-consistent report.

c. Anticipated Peer Review Schedule. Based on the current project schedule, following is a list of review milestones.

REVIEW MILESTONE	COMPLETION DATE	
Initiation of GRR	June	2005
AFB Independent Technical Review (ITR)	**August**	**2007**
Alternative Formulation Briefing (AFB)	September	2007
ITR of draft GRR/EIS	**December**	**2007**
Public Review of Draft GRR/EIS	May	2008
ITR of final GRR/EIS	**July**	**2008**
Circulate Final GRR/EIS	Fall	2008
Public Review of Final GRR/EIS	October	2008
Record of Decision	April	2009

As indicated by the bolded items, ITR peer reviews are scheduled to occur August and December 2007 and July 2008.

d. Conducting External Peer Review. External Peer Review, as discussed in EC 1105-2-408, is not suggested by the PDT at this time. The option of instituting EPR continues, and may be applied if found to be appropriate for selected disciplines at a later time.

e. Public Comment on Decision Document. The public will have an opportunity to comment on the document as part of the National Environmental Policy Act (NEPA) compliance activities, including circulation of the draft and final NEPA documents in May and October 2008. Once completed, the Integrated GRR and EIS will be disseminated to resource agencies, interest groups, and the public as part of the NEPA environmental compliance review. Reference “FEIS / NEPA Public Review” as highlighted in the “Peer Review Plan” flow chart included as Attachment 1. Public entities and private individuals may also review and comment on draft documents as members of the PDT.

f. Provision of Public Comments to Reviewers. All significant and relevant public comments will be provided as part of the review package to Peer Reviewers as they are available and may include but not be limited to: scoping letters, meeting minutes, other received letters, and emails.

g. Anticipated Number of Reviewers. Approximately 12 reviewers would be anticipated for ITR, which will be conducted using Dr Checks software. In the event of the use of EPR at a later date, the Deep Draft Navigation Planning Center of Expertise shall make the final determination for the discipline type and needed number of reviewers for the EPR.

h. Primary Review Disciplines and Expertise. The number of reviewers (Level of Review) shall vary as depicted under “Review Phase” in the “Peer Review Plan” flow chart included as Attachment 1. In the event EPR is used at a later date, the Deep Draft Navigation Planning Center of Expertise shall make the final determination for reviewers, based upon discipline scoping by

Wilmington District. Following is a preliminary list of review disciplines for Independent Technical Review.

PRELIMINARY REVIEW DISCIPLINES FOR ITR
Navigation, harbors
Navigation, locks and dams
Navigation, operations and maintenance
Environmental, mitigation for navigation effects
Design, turning basins
Design, fish passage, e.g., Mike Lesher (St. Paul District)
Structural, locks and dams
Real Estate
Economist
Planning
Cost engineering
Coastal/hydraulics & hydrology
Geotechnical
Fisheries biology, e.g., John Nestler (ERDC)

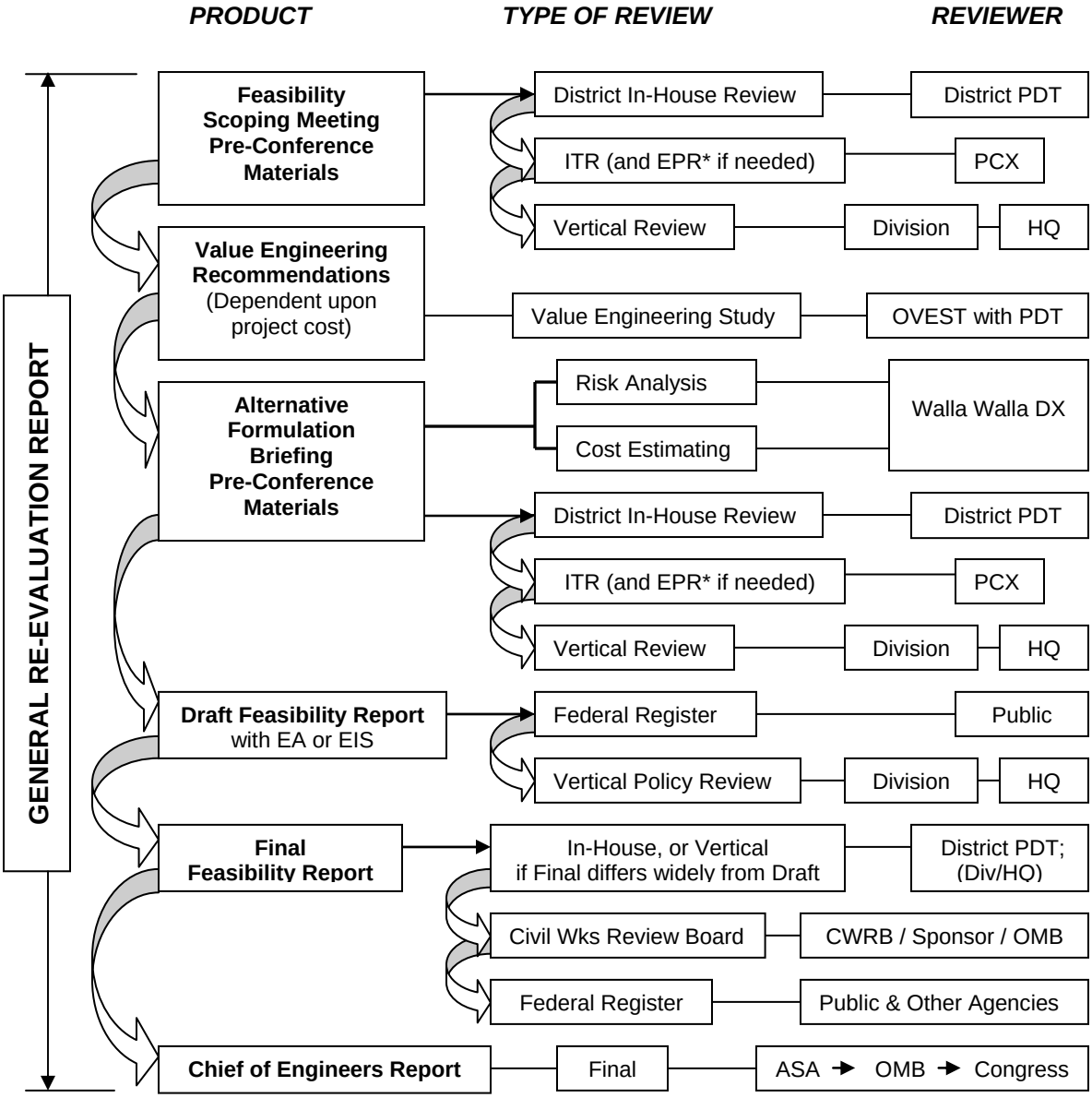
i. Selection of External Peer Reviewers. If EPR is needed at a later date, the Deep Draft Navigation Planning Center of Expertise shall make the final selection of reviewers for the required disciplines, as scoped in advance by Wilmington District.

j. Nomination of Peer Reviewers by the Public. If EPR is needed at a later time, the Deep Draft Navigation Planning Center of Expertise shall make the final determination as to which, if any, peer reviewers should be nominated by the public. Required disciplines for EPR would be scoped in advance by Wilmington District.

Peer Review Plan

ATTACHMENT 1

PEER REVIEW PLAN



***** Reference External Peer Review Decision Checklist in Section b., questions 1 - 5: if any changes occur in checklisted items, the vertical team will determine if External Peer Review (EPR) will be required.
**A Scoping Letter solicits Public involvement during Reconnaissance Phase.
***Project Delivery Team (PDT) includes the non-Federal Sponsor, stakeholders, and resource agencies.